

# THE FIRST SPECIES OF *ARADACRATES* FROM MALAYA AND A NEW SPECIES OF *PRAETORBLISSUS* FROM COSTA RICA (HETEROPTERA: LYGAEIDAE; BLISSINAE)

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*Abstract.*—The genus *Aradacrates* Slater has been previously known only from a single species from Madagascar. *Aradacrates malayensis* is described and illustrated as a new species from Malaya. Included is a discussion of the possible function of shining raised abdominal plates and notes on an early instar nymph. The second species of *Praetorblissus* Slater, *Praetorblissus brailovskyi* is described from bamboos in Costa Rica.

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The Blissinae have been studied intensively in recent decades by the author and his colleagues, with 57% of the 435 species being described since 1960 (Slater and O'Donnell, 1995). Nevertheless some of the most unusual and striking species live in cryptic habitats and are rarely collected. Thus we can expect important additions to the fauna particularly of those species living in bamboos, or having very restricted ranges. In this paper two such species are described. The first, a member of the genus *Aradacrates* is reported from the Orient for the first time, the only previously known species being from Madagascar. The second species in the plesiomorphic genus *Praetorblissus* is one of the most micropterous blissines known, the mesothoracic wings being reduced to minute scale-like flaps.

ARADACRATES SLATER AND WILCOX

*Aradacrates* Slater and Wilcox 1969:439–440.

Type species: *Aradacrates cochlear* Slater and Wilcox. Monobasic.

The genus *Aradacrates* was established by Slater and Wilcox (1969) for a single species from Madagascar. These authors noted the similarity of the produced bucculae to the condition found in the genus *Iphicrates* Distant. They considered the relationship to be convergent and the true phylogenetic affinities to be with another Madagascar endemic, *Aradademus* Slater.

*Aradacrates* is characterized by the elongate, slender, linear body, the strongly incrassate short and spined femora and tibiae. The fore femur bears a single large ventral bifid spline. The first segment of each tarsus is greatly enlarged, almost as long as the heavy tibiae and bears a mat of long hairs on the ventral surface. The dorsal and ventral surfaces lack any pruinosity. The metathoracic scent gland auricle curves anteriorly. Abdominal segments 2 or 3 to 5 are fused. The labium is short, not attaining the mesosternum.

It is important now to be able to examine a species of this striking genus from southeast Asia. It is another example of the relationships often shown by the fauna and flora of Madagascar and Indomalaya. This is probably indicative of old taxa

which formerly had a contiguous distribution in the Palearctic, now disjunct by intervening areas of aridity.

***Aradacrates malayensis*, new species**

(Figs. 1, 2)

Body very elongate, slender, parallel sided. Head, pronotum, scutellum, pleuron, sternum and antennae black. Abdomen dark red brown, almost black especially on sternum with connexivum bright red brown. Apex of tylus, bucculae and legs bright yellow. Clavus and corium dull grayish-white with contrasting yellow cubital vein and with medius and radius anterior to level of apex of clavus also yellow, but shading to almost black posteriorly. Membrane fumose with a broad pale yellow border and a narrow pale streak through middle of basal half. Body with exception of hemelytra shining; no pruinosity present. Hemelytra dull, except for shining veins and area along lateral corial margins. Clothed with decumbent sericeous silvery hairs. Head, pronotum and scutellum granulose rather than distinctly punctate.

Head short, broad, eyes produced, but not stalked, set a short distance away from anterior pronotal margins. Bucculae broad and cup-shaped, extending anteriorly well beyond apex of tylus, but oriented dorso-ventrally to almost enclose sides of tylus, rather than being dorso-ventrally flattened, not attaining distal end of first antennal segment. Length head 0.72, width 0.94, interocular space 0.60. Pronotum parallel sided on posterior one-third, slightly tapering anteriorly. Transverse impression obsolete. Posterior pronotal margin concave before base of scutellum. Length pronotum 1.52, width 1.68. Scutellum with a smooth, slightly elevated median line. Length scutellum 1.0, width 0.80. Radial vein of corium sharply ridged and bearing a line of coarse punctures. Membrane attaining middle of abdominal tergum eight. Length claval commissure 0.68. Midline distance apex clavus-apex corium 2.00. Midline distance apex corium-apex abdomen 2.96. Apex of abdomen broadly truncate. Metathoracic scent gland auricle elongate, almost attaining lateral margin of pleuron, bent forward distally at a right angle. Evaporative area covering entire anterior lobe of metapleuron. Prosternum with a broad mesal trough. Meso- and metasternum smooth and polished. All abdominal sterna smooth and polished mesally, these areas extending laterad as large lobes both anteriorly and posteriorly on sterna 5 through 7 and contrasting strongly with adjacent sericeous areas of abdomen. Abdominal segments 3-5 fused, but suture between 4 and 5 visible. All femora short and strongly incrassate. Fore femur with a large distal bifid spine and a series of upstanding setae. Middle and hind femora each with a series of short, stout spines. Tibiae very short and stout with coarse setiferous spines along shaft. First tarsal segment very large and broad with a thick pad of hairs on ventral surface. Labium short, not reaching onto mesosternum. Length labial segments I 0.42, II 0.56, III 0.30, IV 0.30 (approx.). Antennae terete or slightly fusiform. Length antennal segments I 0.18, II 0.52, III 0.60, IV 0.69 (approx.). Total body length 9.24.

Holotype: ♂. MALAYSIA: Kedah, Gunung Jerai (top), 23.VII.1992, 1200 m. (C. W. & L. B. O'Brien). In American Museum of Natural History.

Paratypes: 2♀ Same data as holotype. In Instituto de Biología (UNAM) and J.A. Slater collections.

Readily separable from the type species *A. cochlear* by its much larger size: over

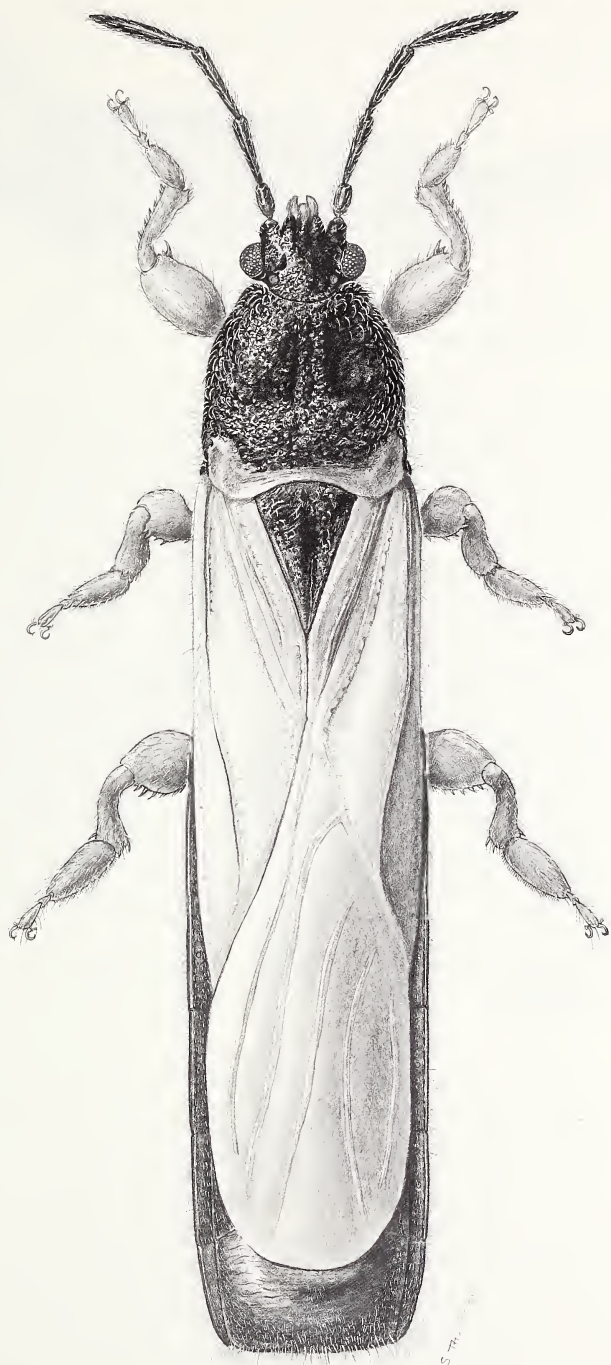


Fig. 1. *Aradacrates malayensis* new species. Dorsal view.

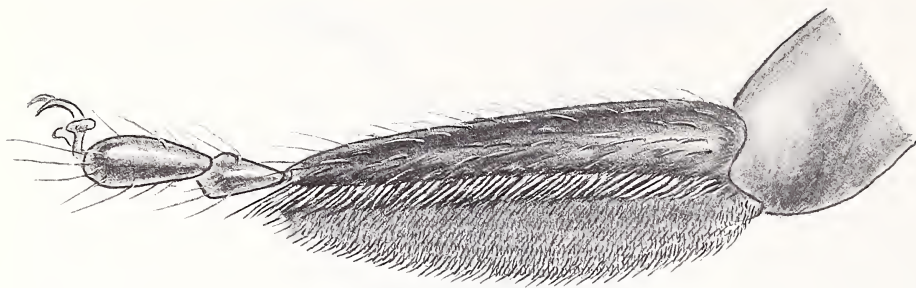


Fig. 2. *Aradacrates malayensis* new species. Fore tarsus.

9 mm (less than 5 mm. in the only known specimen of *A. cochlear*). *A. malayensis* can also be readily distinguished from the type species by having much less elongate bucculae which are not strongly splayed out, nor notched along the lateral margin. The scutellum is  $\frac{1}{4}$  longer than the length of the head in *A. malayensis* (subequal in *cochlear*). The second labial segment is longer than segment one in *A. malayensis* but the reverse in *A. cochlear* (23:19). The second antennal segment is much more than twice as long as segment one in *A. malayensis* (18:52) whereas in *A. cochlear* the second segment is less than twice as long as segment one (15:27).

Although nothing is known of the biology, like several other elongate, slender, polished Blissinae this species shows several apparent structural modifications that probably are to aid it in sliding between the closely appressed sheaths of monocots (bamboos?). This is particularly evident when one examines the ventral surface of the abdomen. The general surface is granular and covered with short decumbent hairs. Contrasting strongly are polished areas on sterna four through seven. On sternum four the entire central area is polished with arm like extensions projecting antero-laterad and posteriorly along the posterior margin. On segment five a pair of large convex circular maculae coalesce posteriorly and expand along the posterior margin. Segment six has similar lateral convex maculae but the central area is also polished. On the seventh segment only a broad elliptical central area is polished. In addition the radial vein and to an extent the vein on the clavus are both raised above the surface and polished.

#### PRAETORBLISSUS SLATER

*Praetorblissus* Slater 1966:3-8.

Type species: *Praetorblissus gigas* Slater. Monobasic.

This is a genus of very large and very rare blissines. It was originally described from South America where three species are now known to occur (Peru and Bolivia). It was first reported from Central America by Slater and Ashlock's (1976) description of *P. obrieni* from Costa Rica. In this paper Slater and Ashlock discussed in detail the importance of this genus for phylogenetic relationships in the Blissinae. The species are known from only a very few specimens and only a single macropter is known. They are large blissines with multispinose fore femora, but differ from the



other large Neotropical Blissinae in having closed fore coxal cavities. Slater and Ashlock (*in* Slater, 1979) placed them near the base of the cladogram of the Blissinae. It is thus important to place on record a second species of the genus from Central America and to establish a bamboo as the host plant of this species.

***Praetorblissus brailovskyi*, new species**

Body flattened dorso-ventrally, polished and shining with pruinosity restricted to a narrow strip mesally on prosternum and ventrally along base of head. General coloration including antennae, black to very dark chocolate brown, posterior pronotal lobe partially sordid yellow. Abdominal tergum within connexivum and legs dark red brown. Glabrous above. Head rugulose. Anterior pronotal lobe smooth except for fine punctures on and around anterior collar and a large impressed puncture inside of each calli surface. Posterior pronotal lobe and wing pads coarsely punctate, abdominal tergum finely punctate. Scutellum conspicuously punctate only laterally.

Head non-declivent, eyes small, set well away from antero-lateral pronotal margins. Tylus extending to middle of first antennal segment. Length head 0.94, width 1.22, interocular space 0.84. Pronotum broad, lateral margins straight from humeral angles to anterior one-third then curving evenly convexly mesad; a well differentiated anterior collar present; anterior lobe with a conspicuous median longitudinal sulcus. Posterior pronotal margin straight. Length pronotum 1.48, width 2.16. Scutellum very broad and short, a slight median elevation on distal half. Length scutellum 0.80, width 1.80. Wing pads reduced to small scales that leave most of metanotum exposed and are remote from first abdominal segment. Length wing pad 1.06. Length abdomen 3.60. Metathoracic scent gland auricle short and thick, curving anteriorly at a right angle, broadly blunt at distal end. Fore femur strongly incrassate, armed below with one very large black spine and a double series of small black spinules. Middle and hind femora also incrassate, armed below with a series of small inconspicuous spines. Labium extending posteriorly beyond fore coxae onto anterior portion of mesosternum. Length labial segments I 0.72, II 0.84, III 0.76, IV 0.56 (approx.). Length antennal segments I 0.36, II 0.88, III 0.76, IV 1.20. Total body length 8.05.

Holotype: ♂ COSTA RICA: Prov. Alajuela, Volcan Poas, 21.I.1995 (in leaf sheath of an unknown species of bamboo). (H. Brailovsky, B. Kohlman). In Instituto de Biologia UNAM, Mexico.

Paratype: 1 ♀ Same data as holotype. In J. A. Slater collection.

*P. basilovskyi* is most closely related to the other known Costa Rican species (*P. obrieni*) but differs in being a much larger, more robust species and is readily distinguishable by the dark reddish legs and the dark abdominal connexivum which is concolorous or darker than the abdominal tergum. In *P. obrieni* the legs and abdominal connexiva are pale yellow and contrast strongly with the nearly black body coloration.

In *P. brailovskyi* the exposed metanotum is dull and finely granulose and the reduced mesothoracic wing pads are straight or slightly concave along their inner margins. These wing pads extend posteriorly beyond the apex of the scutellum. In *P. obrieni* the wing pads are very small, rounded on the inner margin and do not extend posteriorly nearly to the apex of the scutellum.

Nymphs of *Praetorblissus* have not been previously known. A single nymph, probably conspecific with the adults, was taken with them. Unfortunately it is an early instar, probably the second. The only sclerotization on the abdominal venter is a series of median plates on sterna 5–8 (SM 5–SM 8) (see Slater, 1979 for code to nymphal sclerites). Only the apex of the abdomen is sclerotized dorsally (TM 8–TM 9). No sclerotized plates are differentiated around the dorsal abdominal scent gland openings. This nymph is pale sordid yellow, including the appendages, with the mesal area of the abdomen reddish brown.

This species is named for Dr. Harry Brailovsky (Instituto de Biología UNAM), who collected the type specimens, and for his many important contributions to our knowledge of Neotropical Heteroptera.

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